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(71) Applicant (for all designated States except US): KONIN-
KLJKE PHILIPS ELECTRONICS N.V. [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): OPHEY, Willem, G.
[NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven
(NL).

(74) Agent: COBBEN, Louis, M., H.; Philips Intellectual
Property & Standards, Prof. Holstlaan 6, NL-5656 AA
Eindhoven (NL).

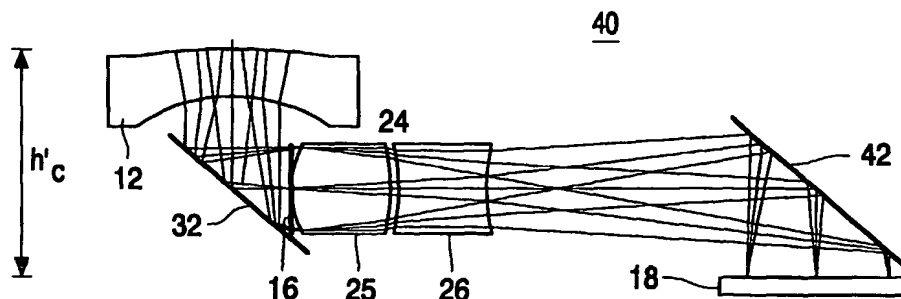
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For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: ZOOM LENS



(57) Abstract: In a zoom lens (30) comprising, from the object side to the image side, a front lens group (12) and a controllable lens group (24), the controllable lens group comprises two lens elements (25, 26) having different dispersions and being movable with respect to each other so as to perform a focusing action. One of the lens elements corrects for the dispersion of the zoom lens. Preferably, the zoom lens comprises at least one folding mirror.

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 249 798 A (MOSKOVICH JACOB) 10 February 1981 (1981-02-10) cited in the application abstract column 3, line 53 -column 4, line 11 table 1 ---	1-8
A	US 5 268 792 A (KREITZER MELVYN ET AL) 7 December 1993 (1993-12-07) figure 9 abstract ---	2
A	US 2002/159772 A1 (SAITO HIROSHI) 31 October 2002 (2002-10-31) figure 1 paragraph '0018! ---	6

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3018

Authorized officer

Luck, W

INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 359 738 B1 (TSUCHIDA HIROFUMI ET AL) 19 March 2002 (2002-03-19) abstract figure 12	7,8
X	US 5 745 301 A (BETENSKY ELLIS I ET AL) 28 April 1998 (1998-04-28) abstract table 1	1-8
A	US 5 071 235 A (MORI NOBUYOSHI ET AL) 10 December 1991 (1991-12-10) figure 1 column 4, line 67 -column 5, line 19	1

INTERNATIONAL SEARCH REPORT

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PCT/IB 03/04879

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4249798	A	10-02-1981	NONE
US 5268792	A	07-12-1993	GB 2261529 A ,B JP 5508945 T WO 9221048 A1
US 2002159772	A1	31-10-2002	JP 2000199865 A
US 6359738	B1	19-03-2002	JP 2001141998 A
US 5745301	A	28-04-1998	DE 69530113 D1 DE 69530113 T2 EP 0799433 A1 JP 10513270 T WO 9619749 A1
US 5071235	A	10-12-1991	JP 2006917 A JP 1307714 A JP 2676367 B2